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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,598	02/24/2004	Junwon Lee	87163AEK	3196

7590 06/20/2006
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Patent Legal Staff
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343 State Street
Rochester, NY 14650-2201

EXAMINER

CHOI, JACOB Y

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

11A

Office Action Summary	Application No. 10/785,598	Applicant(s) LEE ET AL.	
	Examiner Jacob Y. Choi	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,7,8,12-17,20-42 and 44-46 is/are pending in the application.
- 4a) Of the above claim(s) 20-31,35,36,38,39,45 and 46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,7,8,12-17,32-34,37,40-42 and 44 is/are rejected:
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 5/5/2006 disclaiming the terminal portion of any patent granted on this application has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

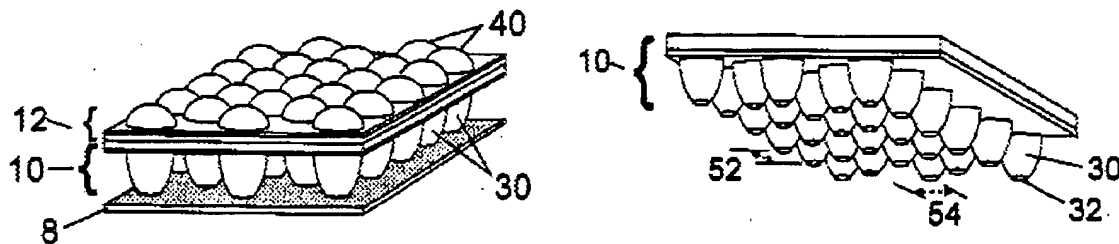
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims **1, 3, 7, 8, 12-17, 32-34 and 37** are rejected under 35 U.S.C. 102(b) as being anticipated by Zimmerman et al. (USPN 5,598,281)

Regarding claim **1**, Zimmerman et al. discloses an array of tapered structures (e.g., 33), each the tapered structure (e.g., 33) having a light input aperture (e.g., 32) and a larger light output aperture (e.g., 34), wherein the inner surface of each the tapered structure (e.g., 33) is adapted to reflect off-axis light incident and at the input aperture (32) to the output aperture (34) in which the array of tapered structures (e.g., 33) comprises an array of concentrators (e.g., 10) extending between an input aperture (e.g., 32) on an input surface and an output aperture (e.g., 34) on an output surface, each the concentrator having a *generally* parabolic shape (e.g., column 8, lines 20-30;

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"... Sidewalls 33 connect input surface 32 to output surface 34. Sidewall 33 can be straight, but preferably, sidewalls curve outwardly as shown in Figure 4 ... etc.") taken from the light input aperture to the light output aperture wherein, in a cross-section parallel to the output aperture, the tapered structure is substantially circular (e.g., Figure 3C).



Note: Claims in the pending application should be given their broadest reasonable interpretation (e.g., generally parabolic, substantially circular ... etc). *In re Pearson*, 181 USPQ 641 (CCPA 1974).

It has been held that the recitation that an element(s) is "*adapted to*" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense, *In re Hutchison*, 69 USPQ 138.

The recitation a brightness enhancement film has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

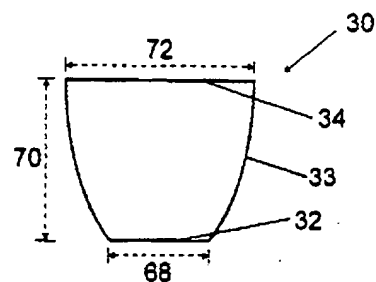
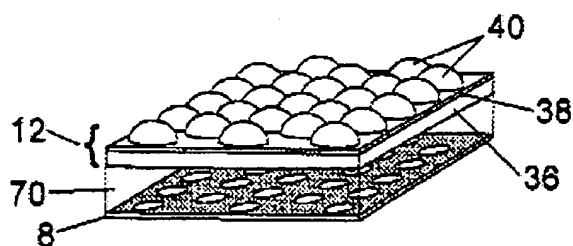
Things clearly shown in reference in reference patent drawing qualify as prior art features, even though unexplained by the specification (e.g., generally parabolic shaped tapered structure). *In re Mraz*, 173 USPQ 25 (CCPA 1972).

Regarding claim 3, Zimmerman et al. discloses the input surface is in contact with a light guide plate (e.g., 8), and each the concentrator has an index of refraction *substantially* equal to the index of refraction of the light guide plate (e.g., Figure 8B; column 7, lines 15-35; "... the aperturing means 8 comprising substrate 21, reflective

regions 24 and transparent aperture region 22 ... etc.”; air, refractive index $n=1$, transparent material, refractive index $n=1.5$).

Regarding claim 7, Zimmerman et al. discloses the off-axis light is provide by a light guide plate (e.g., Figure 11).

Regarding claim 8, Zimmerman et al. discloses an array of hollow (e.g., column 9, lines 20-35; “... the first collimating means comprises a planar slab of transparent material 70... etc”), reflective cavities (e.g., column 9, lines 20-40; “... slab waveguide 70 is optimized to cause the light rays refracted therethrough to be collimated by micro lenses 40 ... etc”) extending between a light input surface and a light output surface, in which the array comprises concentrators (e.g., 33) extending between an input aperture (e.g., 32) on an input surface and an output aperture (e.g., 34) on an output surface, each the concentrator (e.g., 33) having a *generally* parabolic shape (e.g., column 8, lines 20-30; “... Sidewalls 33 connect input surface 32 to output surface 34. Sidewall 33 can be straight, but preferably, sidewalls curve outwardly as shown in Figure 4 ... etc.”) taken from the light input aperture to the light output aperture wherein, in a cross-section parallel to the output surface, the hollow reflective cavities are substantially circular (e.g., Figure 10B)



Regarding claim 12, Zimmerman et al. discloses the side-wall of at least one of the reflective cavities comprises a reflective coating (e.g., column 7, lines 10-20; "... *The coating used on the sides 33 of the micro collimators can be any reflective material such as aluminum, chrome or silver ... etc.*").

Regarding claim 13, Zimmerman et al. discloses at least two of the hollow, reflective cavities differ dimensionally from each other (e.g., Figures 3A-3D; column 7, lines 15-35; "... *most preferred that the sum of the areas for all light apertures 22 range from about 20 percent to about 30 percent of the total area of substrate 21. Dimensions 42, 44 and 50 are adjusted to meet those parameters ...etc.*")

Regarding claim 14, Zimmerman et al. discloses the input surface comprises a transparent substrate (e.g., Figure 10B; column 7, lines 15-35; "... *the aperturing means 8 comprising substrate 21, reflective regions 24 and transparent aperture region 22 ... etc.*")

Regarding claim 15, Zimmerman et al. discloses the output surface comprises a transparent substrate (e.g., 12).

Regarding claim 16, Zimmerman et al. discloses the film comprises a reflective substrate (e.g., 24).

Regarding claim 17, Zimmerman et al. discloses each of the hollow, reflective cavity has an input aperture and an output aperture, the output aperture being larger in area than the input aperture (e.g., Figure 4).

Regarding claim **32**, Zimmerman et al. discloses an array of concentrators (e.g., 30) extending between a light input aperture (e.g., 32) along an input surface and a light output aperture (e.g., 34) along an output surface, each the concentrator (e.g., 30) having a *generally* parabolic shape (e.g., column 8, lines 20-30; "... Sidewalls 33 connect input surface 32 to output surface 34. Sidewall 33 can be straight, but preferably, sidewalls curve outwardly as shown in Figure 4 ... etc.") taken from the light input aperture to the light output aperture, wherein, for each the concentrator (e.g., 30), the area of input aperture of the aperture is less than the area of the output aperture (e.g., Figure 4), the input surface is in contact with a light guide plate (e.g., 9), the index of refraction is *substantially* equal to the index of refraction of the light guide plate (e.g., Figure 8B; column 7, lines 15-35; "... the aperturing means 8 comprising substrate 21, reflective regions 24 and transparent aperture region 22 ... etc."; air, refractive index $n=1$, transparent material, refractive index $n=1.5$).

Regarding claim 33, Zimmerman et al. discloses a lens (e.g., 40) formed at the output aperture for at least one the concentrator.

Regarding claim 34, Zimmerman et al. discloses total internal reflection (e.g., column 2, lines 30-50; "... the array of micro collimators via total internal reflections from the sides of the micro collimators ... etc.") within each the concentrator directs a portion of off-axis light from the input aperture (e.g., 32) to the output aperture (e.g., 34).

Regarding claim **37**, Zimmerman et al. discloses an output surface having an array of tapered concentrators (e.g., 33) including a light input aperture (e.g., 32) and a

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light output aperture (e.g., 34), each concentrator (e.g., 30) having a *generally* parabolic shape (e.g., column 8, lines 20-30; "... Sidewalls 33 connect input surface 32 to output surface 34. Sidewall 33 can be straight, but preferably, sidewalls curve outwardly as shown in Figure 4 ... etc.") taken from a light input aperture to a light output aperture wherein the input aperture of each the concentrator is smaller than the output aperture (e.g., Figures 4).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **40-42 and 44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Zimmerman et al. (USPN 5,598,281).

Regarding claims 40-42 & 44, Zimmerman et al. discloses the structural limitations of applicant's claimed invention, explained above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to recite mere claiming of a use of a particular structure, which has been clearly disclosed by the prior art reference, Zimmerman et al.

It has been held that to be entitled to weight in method claims, the recited structure limitations therein must affect the method in a manipulative sense, and not to

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amount to the mere claiming of a use of a particular structure. *Ex parte Pfeiffer*, 1962 C.D. 408 (1961).

Response to Amendment

6. Examiner acknowledges that the applicant has amended claims 1, 8, 32, 37 and 40. Claims 2, 4-6, 9-11, 18, 19 and 43 are canceled. Currently, claims 1, 3, 7, 8, 12-17, 20-42, 45 and 46 are pending in the application, however claims 20-31, 35, 36, 38, 39, 45 and 46 are withdrawn from consideration.

Response to Arguments

7. Applicant's arguments with respect to claims 1, 3, 7, 8, 12-17, 32-34, 37, 40-42 and 44 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments, see pages 9-10, filed 5/5/2006, with respect to claims 1, 3, 7, 8, 12-17, 32-34, 37, 40-42 and 44 have been fully considered and are persuasive. The claim rejections - 35 USC § 102 and 103 of 2/14/2006 has been withdrawn.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kimura (USPN 7,001,060) – front light having a plurality of prism-shaped lenses

Winston (USPN 4,240,692) – energy transmission

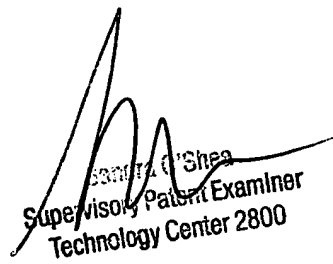
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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Y. Choi whose telephone number is (571) 272-2367. The examiner can normally be reached on Monday-Friday (10:00-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JC


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